

A new species of Tertiary *Notoplax* (Mollusca: Polyplacophora: Acanthochitonidae) from South Australia.

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ABSTRACT

A new species of Tertiary chiton, *Notoplax buicki* sp. nov., is described from the Dry Creek Sands (Pliocene, Yatalan) from South Australia. The new species most closely resembles the extant *N. speciosa*, but is distinguished from it by the elongate lateral teeth on the sides of the jugum, and the more triangular pustules which are not differentiated on the low diagonal rib separating the lateral and pleural areas.

INTRODUCTION

A large number of Tertiary chiton species have been described from southern Australia, but only four are recorded from South Australia (Cotton & Godfrey, 1940; Cotton & Weeding, 1941; Cotton, 1964; Gowlett-Holmes & McHenry, 1988). All South Australian species are from bores, and were recovered from the Dry Creek Sands, which are Yatalan (Late Pliocene) in age. During an examination of a collection of fossil chiton valves belonging to the late Mr W. George Buick of Perth, W.A., I located four median valves of a species of *Notoplax* that differed from all known fossil and extant species of the genus. This new species is described here. The material reported here is deposited in the South Australian Museum, Adelaide (SAM) and the Western Australian Museum, Perth (WAM).

Family Acanthochitonidae Pilsbry, 1893

Genus *Notoplax* H. Adams, 1861

Notoplax buicki sp. nov.

Figure 1

Holotype

SAM P29792, one median valve with slight chips to the insertion plates and sutural laminae, 4.75 x 4.80 mm, collected from approximately 91 m (300 ft), Angas Home Bore, Parafield Gardens, Section 2259, Hundred of Yatala, County Adelaide, South Australia (34°47'06"S, 138°36'26"E), collector unknown, collected in 1940, Dry Creek Sands, Yatalan, Late Pliocene.

Paratypes

SAM P29793, two incomplete median valves, both with slight chips to edges and with left-hand posterior insertion plates missing, 4.70 x 5.20 mm and 3.65 x 3.60 mm respectively, with same collection data as holotype. WAM 92.2, one incomplete, slightly worn median valve, with slight chips to the insertion plates and sutural laminae and with most of the right-hand sutural lamina missing, 4.30 x 4.80 mm, with same collection data as holotype.

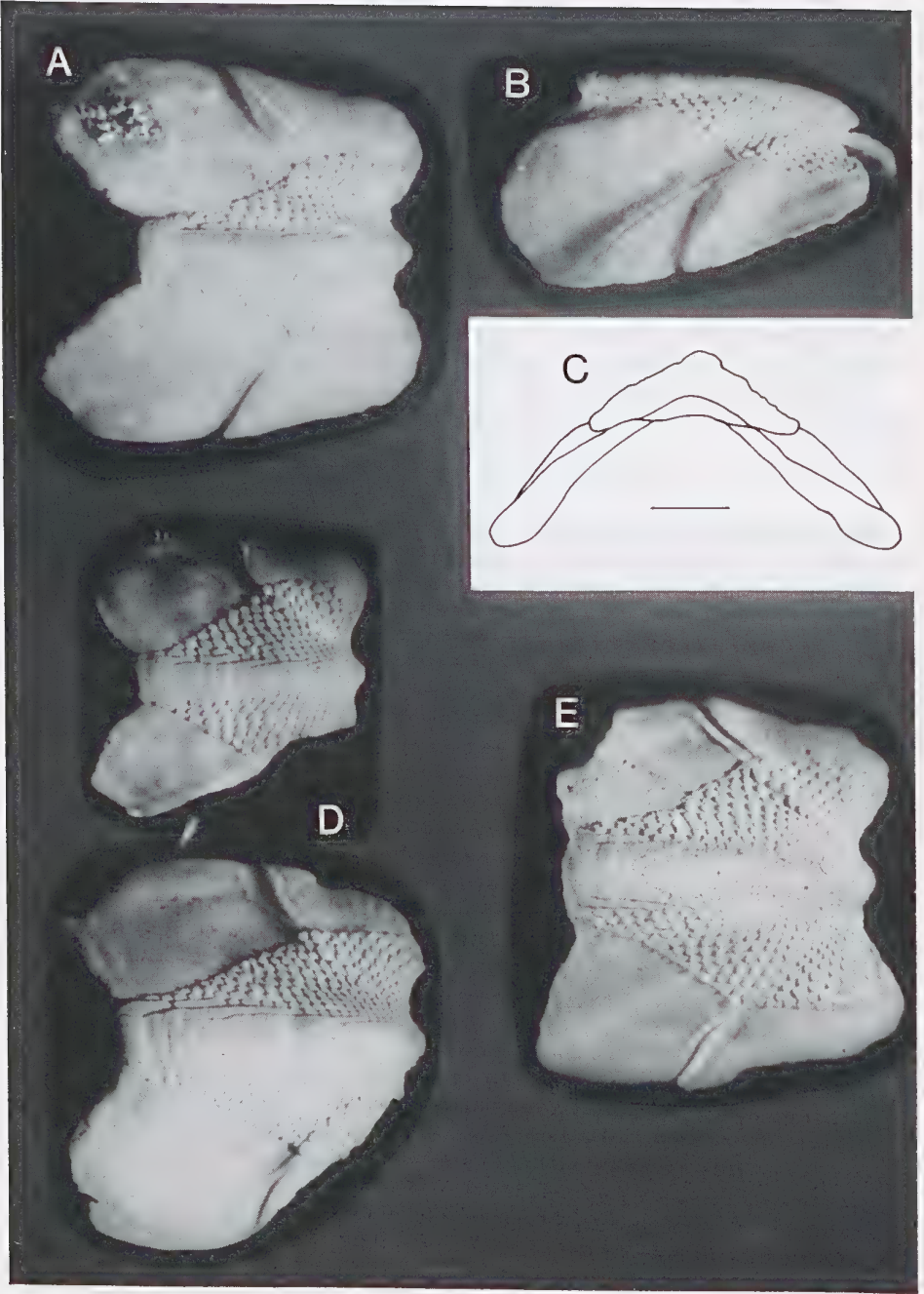


Figure 1. *Notoplax buicki* sp. nov. holotype (SAM P29792) A. dorsal view, x 11; B. lateral view, x 11; C. anterior profile, scale bar = 1 mm; paratypes D. (SAM P29793) dorsal views, x 10.5; E. (WAM 92.2) dorsal view, x 12.

Diagnosis

Medium chiton. Carinated, medium to high elevation. Jugum narrow, about 1/5 width of tegmentum, smooth, toothed laterally; median valves strongly beaked; low lateropleural rib; pustules triangular to "U"-shaped, flat-topped. Slit formula ?/1/?. Girdle unknown.

Description of holotype

Tegmentum about 35-40% of articulamentum. Valve narrow, carinated, medium to high elevation (Fig. 1C); strongly beaked, posterior edge concave. Jugum smooth, narrow, with elongate lateral teeth, about 1/5 width of tegmentum (Fig. 1A). Lateral and pleural areas sculptured with random, roundly triangular to "U"-shaped, flat-topped pustules, smaller near beak, not differentiated on the low diagonal rib separating lateral and pleural areas. Slit 1, very short, about 1/10 width of articulamentum, in narrow, anterior facing groove 4/5 to 9/10 way to edge of tegmentum, posterior edge of slit groove raised to form a ridge (Fig. 1B).

Etymology

Named after the late Mr W. George Buick, a keen collector of both fossil and living shells, who generously donated three of the type specimens of this species to SAM, and the remainder of his collections to WAM.

Stratigraphical occurrence

The specimens were retrieved from the Angas Home Bore at a depth of approximately 91 m (300 ft), where the bore bottomed in "shell sands" which are consistent with a stratigraphic determination of Dry Creek Sands (Lindsay, 1987). The four valves of *N. buicki* would therefore be Yatalan (Late Pliocene) in age.

Variation

Although more worn and damaged, the paratypes (Figs 1D,E) are like the holotype. The anterior and posterior valves are unknown.

Comparison with other species

The new species was placed in the genus *Notoplax* sensu Gowlett-Holmes (1991) because of its reduced tegmentum, well defined narrow jugum, its large insertion plates with small slits, and because it bears a strong resemblance to other species of *Notoplax*, both extant and extinct.

Notoplax buicki was compared with other Tertiary and extant species of Acanthochitonidae in the collections of SAM and WAM, and with extant species of *Notoplax* in the collections of the Australian Museum, Sydney (AM), the Museum of Victoria, Melbourne (NMV) and the Tasmanian Museum and Art Gallery, Hobart (TM). It most closely resembles the extant *N. speciosa* (H. Adams, 1861), but can be readily distinguished from it by the elongate lateral teeth on the sides of the jugum, and the more triangular pustules which are not differentiated on the low diagonal rib separating the lateral and pleural areas. The new species can be easily distinguished from *N. adalaidae* (Ashby & Cotton, 1936), which is also from the Dry Creek Sands, by its greater percentage of tegmentum to articulamentum, the more strongly beaked posterior edge of the median valve, and the elongate lateral teeth on the sides of the jugum.

Gowlett-Holmes and McHenry (1988) described *Notoplax (N.) arenaria* from approximately the same level of the Angas Home Bore as *N. buicki*, but this species

does not belong in *Notoplax* s.s. because of its wide, regularly grooved jugum. The current generic position of *arenaria* is uncertain.

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